

IN THE SPECIFICATION:

The specification as amended below with replacement paragraphs shows added text with underlining and deleted text with ~~striketrough~~.

Please REPLACE paragraph [0021] with the following paragraph:

[0021] FIG. 6 is a flowchart of a signal processing method according to the present invention. Referring to FIG. 6, first, a reference signal $x(t)$ is computed at operation 600. The reference signal $x(t)$ is an ideal result output where information b_k , which has the same signal component as a signal a_k before recording onto a predetermined channel and a portion in which level transition occurs, passes through a channel having a channel transfer function $h(t)$. Also, the information b_k satisfies an RLL constraint of the signal a_k . The reference signal $x(t)$ is computed from Equation (3), which is the result of convolution of the information b_k and the channel transfer function $h(t)$. A channel output signal having the inherent channel characteristics $h(t)$ is read at operation 610. The read signal $y(t)$ is a combination of noise and the result of convolution of the recorded signal a_k and the channel transfer function $h(t)$ as defined by Equation (1). A signal interval, during which error rate is above a predetermined reference level, is detected from the read signal $y(t)$ at operation 620. Here, the predetermined reference level refers to an error rate which can be expected from a signal output passing through a channel where channel characteristics of a recording medium are considered, as shown in Equation (2). To implement this, in a channel on an optical disc, an intermediate value is set to measure a crossing point for the intermediate value level, thereby detecting a predetermined interval positioned in close proximity of the crossing point as a maximum error region and a signal over the region as $y_1(t)$. Since the point at which the signal $y(t)$ crosses the intermediate value level is an interval during which a signal transition occurs, the predetermined interval in the vicinity of the crossing point is a region having a maximum likelihood of error. On the other hand, in a channel on a hard disc, upper and lower levels are set to measure a crossing point of the signal $y(t)$ and each of the upper and lower levels, thereby detecting a predetermined interval in the vicinity of the crossing point as a maximum error region and a signal over the region as $y_1(t)$. Similarly, since the point at which each level crosses the signal $y(t)$ is an interval during which a signal transition occurs, the predetermined interval in the vicinity of the crossing point is determined to be a region having a maximum likelihood of error. In a channel having other characteristics, where a signal after passing through the channel has two or more levels, a predetermined level value is set between each of the signal levels to determine

a region having a maximum likelihood of error by measuring a crossing point of the predetermined level value and the channel signal in the manner described above. Then, all possible error paths are extracted from the signal $y_1(t)$ in the region having a maximum likelihood of error at operation 630. This extraction is made in the same manner as that described above with reference to FIG. 3. A difference between a signal along each of the error paths and the reference signal $x(t)$ is obtained from Equation (4) to select an error path having the smallest difference (D) and replace the signal along the selected path by the reference signal $x(t)$ at operation 640. Operation 640 corrects an error signal at a region having a maximum likelihood of error to a normal signal. Finally, a simple threshold decision is applied to a part of a channel signal $y(t)$ in the region having a maximum likelihood of error corrected as in the step-operation 640 and the rest of the signal or an appropriate algorithm is applied to other channel output having two or more input levels, thereby performing recovery of the original recorded signal ak at operation 650.